## CLAIM AMENDMENTS

1-24 (canceled)

25. (new) A method for producing magnetically active shape memory metal alloy containing three metallic elements, wherein the three metallic elements are nickel, manganese and gallium respectively, said method comprising:

melting a first and a second of the three elements to form a master alloy,

cooling the master alloy,

crushing the master alloy,

melting the crushed master alloy with the third element to form a nickel-manganese-gallium alloy,

homogenizing the melt essentially at the melting temperature,

casting the obtained nickel-manganese-gallium alloy, and

subjecting the nickel-manganese-gallium alloy to directional solidification at 10-100° C below the liquidus temperature of said nickel-manganese-gallium alloy.

26. (new) A method according to claim 25, comprising melting the crushed master alloy at a temperature of about 1300° C.

27. (new) A method according to claim 25, comprising homogenizing the melt by keeping the melt at the melting temperature for about 1 hour.

28. (new) A method according to claim 25, comprising carrying out the steps of melting the first and second elements, cooling the master alloy, crushing the master alloy, melting the crushed master alloy with the third element, and homogenizing the melt in an inert gas atmosphere.

29. (new) A method according to claim 25, comprising carrying out the steps of melting the crushed master alloy with the third element and casting the nickel-manganese-gallium alloy at a pressure in the range 20-200 mbar below atmospheric.

30. (new) A method according to claim 25, further comprising homogenizing the cast nickel-manganese-gallium alloy at a temperature within the range 800-1000° C.

31. (new) A method according to claim 30, comprising carrying out the step of homogenizing the cast nickel-manganese-gallium alloy in a protective gas atmosphere.

32. (new) A method according to claim 25, wherein the nickel content in the metal alloy is within the range 45-60 atom %.

33. (new) A method according to claim 25, wherein the manganese content in the metal alloy is within the range 15-35 atom %.

34. (new) A method according to claim 25, wherein the gallium content in the metal alloy is within the range 15-30 atom %.

35. (new) A method according to claim 25, comprising directionally solidifying the nickel-manganese-gallium alloy at a solidification rate within the range 0.1-50 mm/min.

36. (new) A method according to claim 35, comprising directionally solidifying the nickel-manganese-gallium alloy at a solidification rate within the range 1-20 mm/min.

37. (new) A method according to claim 25, comprising placing the third element in a crucible, adding the crushed master alloy to the crucible, and melting the crushed master alloy with the third element.

38. (new) A method according to claim 25, wherein the first and second metallic elements are nickel and manganese and the third metalllic element is gallium.

39. (new) A method according to claim 25, wherein the first and second metallic elements are nickel and gallium and the third metalllic element is manganese.

40. (new) A method for producing magnetically active shape memory metal alloy containing nickel, manganese and gallium, comprising:

melting nickel and manganese to form a nickel-manganese master alloy,

cooling the master alloy,

crushing the master alloy,

adding gallium to the crushed master alloy,

melting the crushed master alloy with the added gallium,

homogenizing the melt essentially at the melting temperature,

casting the obtained nickel-manganese-gallium alloy, and

subjecting the nickel-manganese-gallium alloy to directional solidification at 10-100° C below the liquidus temperature of said nickel-manganese-gallium alloy.

41. (new) A method according to claim 40, comprising placing the gallium in a crucible, adding the crushed master alloy to the crucible, and melting the crushed master alloy with the gallium.

42. (new) A method for producing magnetically active shape memory metal alloy containing nickel, manganese and gallium, comprising:

melting nickel and gallium to form a nickel-gallium master alloy,

cooling the master alloy,

crushing the master alloy,

adding manganese to the crushed master alloy,

melting the crushed master alloy with the added manganese,

homogenizing the melt essentially at the melting temperature,

casting the obtained nickel-manganese-gallium alloy, and

subjecting the nickel-manganese-gallium alloy to directional solidification at 10-100° C below the liquidus temperature of said nickel-manganese-gallium alloy.

43. (new) A method according to claim 42, comprising placing the manganese in a crucible, adding the crushed master alloy to the crucible, and melting the crushed master alloy with the manganese.